

# TCAF1 (Y-14): sc-240372

## BACKGROUND

TRPM8 (transient receptor potential cation channel, subfamily M, member 8) is a multi-pass membrane protein that is expressed at high levels in prostate. TRPM8 functions as a receptor-activated cation channel that is permeable to monovalent cations (such as sodium and potassium) and divalent  $Ca^{2+}$  and is involved in the detection of temperature sensations (such as the feeling of coolness) throughout the body. TRPM8 is overexpressed in prostate tumors, as well as in colon, breast and lung cancers. TCAF1 (TRPM8 channel-associated factor 1), also known as FAM115A, is a 921 amino acid plasma membrane protein that is expressed as 2 alternatively spliced isoforms and belong to the TCAF family. TCAF1 isoform 2 is expressed in prostate and strongly expressed in cancerous prostate tissue. TCAF1 consists of a peptidase M60 domain and a C-terminal region that is necessary for the channel activity stimulation. TCAF1 along with family member TCAF2 interact with plasma membrane cation channel TRPM8 and promotes its trafficking to the cell surface. TCAF1 is encoded by a gene located on human chromosome 7q35.

## REFERENCES

1. Tsavaler, L., et al. 2001. TRPP8, a novel prostate-specific gene, is upregulated in prostate cancer and other malignancies and shares high homology with transient receptor potential calcium channel proteins. *Cancer Res.* 61: 3760-3769.
2. de la Peña, E., et al. 2005. The contribution of TRPM8 channels to cold sensing in mammalian neurones. *J. Physiol.* 567: 415-426.
3. Erler, I., et al. 2006. Trafficking and assembly of the cold-sensitive TRPM8 channel. *J. Biol. Chem.* 281: 38396-38404.
4. Facer, P., et al. 2007. Differential expression of the capsaicin receptor TRPV1 and related novel receptors TRPV3, TRPV4 and TRPM8 in normal human tissues and changes in traumatic and diabetic neuropathy. *BMC Neurol.* 7: 11.
5. Bödding, M., et al. 2007. Characterisation of TRPM8 as a pharmacophore receptor. *Cell Calcium* 42: 618-628.
6. Bidaux, G., et al. 2007. Prostate cell differentiation status determines transient receptor potential melastatin member 8 channel subcellular localization and function. *J. Clin. Invest.* 117: 1647-1657.
7. Mahieu, F., et al. 2007. TRPM8-independent menthol-induced  $Ca^{2+}$  release from endoplasmic reticulum and Golgi. *J. Biol. Chem.* 282: 3325-3336.

## CHROMOSOMAL LOCATION

Genetic locus: TCAF1 (human) mapping to 7q35; Tcaf1 (mouse) mapping to 6 B2.1.

## SOURCE

TCAF1 (Y-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TCAF1 of human origin.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-240372 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

TCAF1 (Y-14) is recommended for detection of TCAF1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TCAF1 (Y-14) is also recommended for detection of TCAF1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TCAF1 siRNA (h): sc-89631, TCAF1 siRNA (m): sc-145019, TCAF1 shRNA Plasmid (h): sc-89631-SH, TCAF1 shRNA Plasmid (m): sc-145019-SH, TCAF1 shRNA (h) Lentiviral Particles: sc-89631-V and TCAF1 shRNA (m) Lentiviral Particles: sc-145019-V.

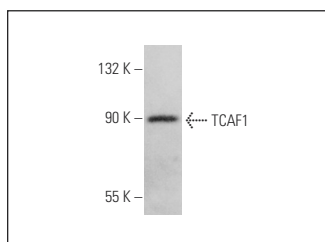
Molecular Weight of TCAF1: 102 kDa.

Positive Controls: PC-3 cell lysate: sc-2220.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



TCAF1 (Y-14): sc-240372. Western blot analysis of TCAF1 expression in PC-3 whole cell lysate.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.